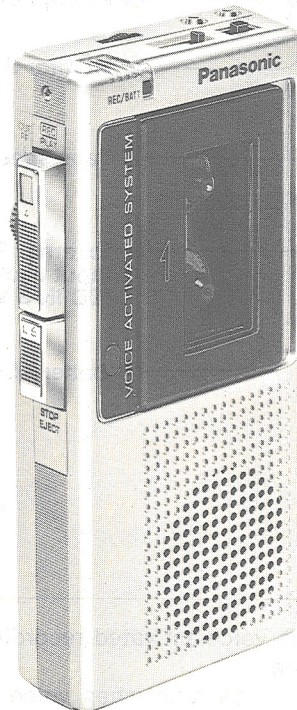


Service Manual

Microcassette

2-Speed Microcassette Recorder
with Voice Activated System

RN-109
(Silver)



This is the Service Manual
for the following areas.

P ...For U.S.A.

C ...For Canada.

RN-006 MECHANISM SERIES

■ SPECIFICATIONS

Power Requirement:	AC; 120V, 60Hz (with optional Panasonic AC Adaptor RP-34) Battery; 3V (two "AA" size dry batteries) Car Battery; with optional Panasonic Car Adaptor RP-993
Motor:	Electrical governor motor
Program Time:	2 hours with RT-60MC microcassette tape (at LP speed) 1 hour with RT-60MC microcassette tape (at SP speed)
Track System:	2 Track monaural recording and Playback
Tape Speed:	SP; 2.4cm/s (15/16 ips) LP; 1.2cm/s (15/32 ips)
Fast Forward and Rewind Time:	Approx. 120 seconds with RT-60MC microcassette tape
Inputs:	Mic; sensitivity 0.25mV/applicable microphone impedance 200Ω~600Ω DC-in; 3V
Output:	Monitor; 8Ω
Speaker:	3.6cm PM (1-3/8") dynamic speaker
Dimensions:	60.8mm(W)×127mm(H)×24.5mm(D) [2-3/8"(W)×5"(H)×1"(D)]
Weight:	180g (7 oz) without batteries

Weights and dimensions shown are approximate.

(Les poids et dimensions mentionnés sont approximatifs.)

Design and specifications are subject to change without notice.

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LOCATION OF CONTROLS AND COMPONENTS

CONTROLS

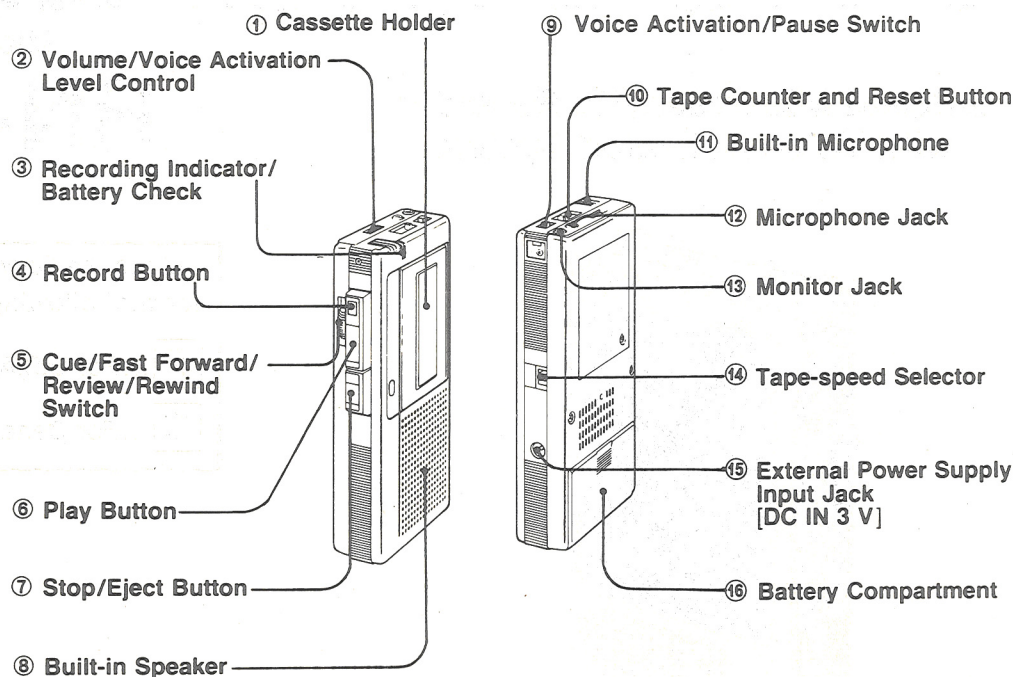


Fig. 1

■ VOICE ACTIVATED RECORDING

What is voice activated recording?

When conferences or conversation is recorded using the voice-activated recording function, only the sound is recorded automatically so there is no tape waste.

When the Voice Activation Switch is set to "ON", the tape runs when voice is picked up by the microphone (Built-in Microphone, External Microphone) and when no voice is picked up, the tape stops running automatically about 4 seconds later.

Note:

- The recording level is automatically adjusted regardless of the position of the Volume/Voice Activated Level Control.

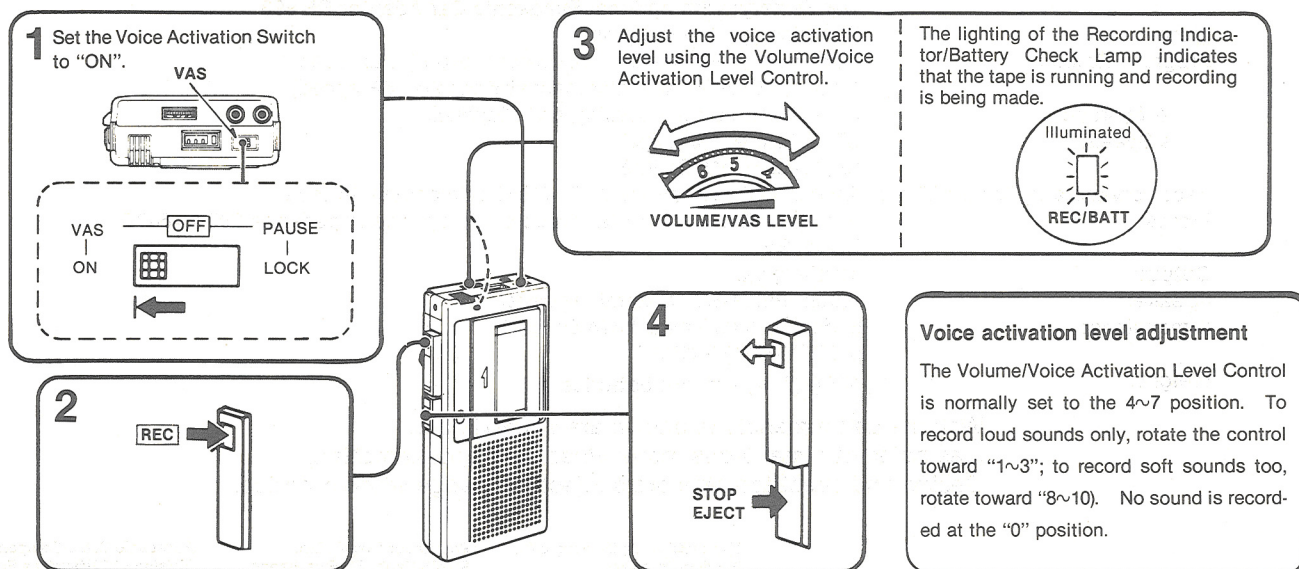


Fig. 2

DISASSEMBLY INSTRUCTIONS

Notes:

1. Because this unit is very small, and therefore the screws are also especially small, be careful not to lose any parts during disassembly.
2. Be very careful, when replacing parts or checking, not to damage the lead wiring, because it is much thinner than lead wiring used in other sets.

A. How to remove the cassette lid assembly (M84).

- As shown in fig. 3, push the claw in the direction of arrow ①, then pull cassette lid assembly in the direction of arrow ②. Then, it can be removed.

* The head azimuth can be removing the cap (K16).

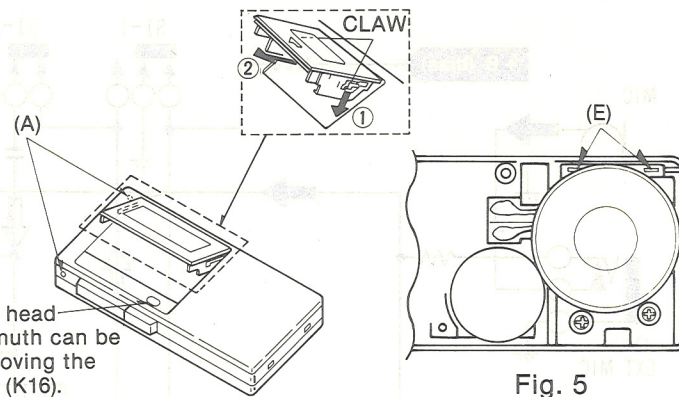


Fig. 3

Fig. 5

Fig. 6

B. How to remove main case assembly (K1).

1. Remove two screws-A (1.6×4). (Fig. 3)
2. As shown in fig. 3, push the main case assembly in the direction of arrow ④ while pulling portion (B) in the direction of arrow ③. Then, the main case assembly can be removed.

C. How to remove the bottom case (K2).

1. Remove two screws-C (2×1.6) and one screw-D (1.6×4). (Fig. 4)
2. Desolder the point (E) joining the battery terminal and the FPC board. The bottom case assembly can be, then, removed as shown in fig. 6.

NOTE:

Be careful not to lose the shelter (K19) since it is easy to come off as shown in fig. 7.

D. How to remove FPC board

- Remove one screw-F (1.6×2.2), one screw-G (1.6×3) and one screw-H (1.6×1.5). (Fig. 7)

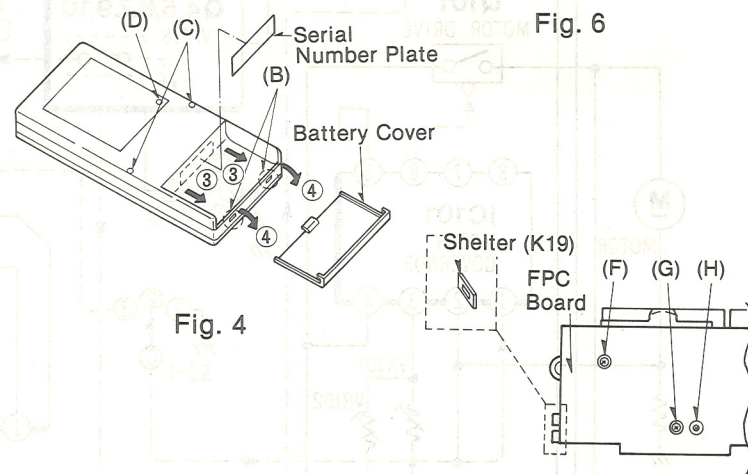


Fig. 4

Fig. 7

REPLACING THE MAIN PARTS OF THE MECHANISM UNIT

• To remove the mechanism unit, see the section "DISASSEMBLY INSTRUCTION".

A. How to replace the motor assembly

1. Remove two screws (A) to remove the motor assembly. (See fig. 8.)
2. Mount the motor assembly so that its lead wires direct as shown in fig. 8.

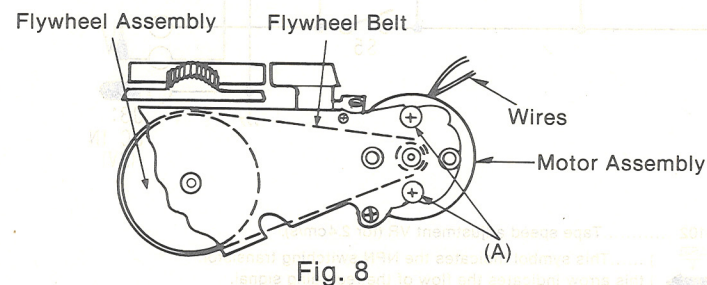


Fig. 8

B. How to replace record/playback head

1. Remove the pinch roller spring as shown in fig. 9.
2. Remove the poly washer (B) to remove the pinch roller arm assembly. (See fig. 9.)
3. Remove two screws (C) to remove the record/playback head. (See fig. 9.)
4. When the record/playback head is installed, reverse the disassembly procedure above.
5. Readjust the head, referring to measurement and adjustment in this service manual.

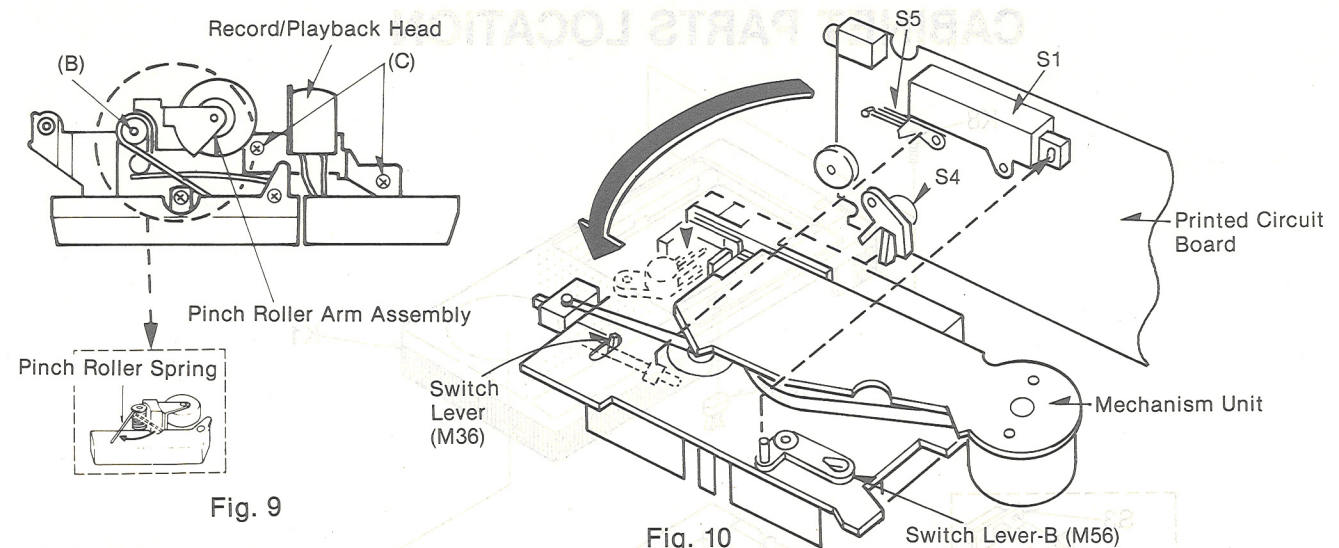


Fig. 9

Fig. 10

Assembly notes:

- When installing the printed circuit board on the mechanism unit, note the following: Check that the record/playback (S1), play (S5) and fast forward/rewind (S4) switches are placed in their specified positions as shown in fig. 10.

MEASUREMENT AND ADJUSTMENT METHODS

NOTES: Keep good condition, set switch buttons and controls in the following positions, unless otherwise specified.

- Make sure heads are clean.
- Make sure capstan and pinch roller are clean.
- Judgeable room temperature: $20 \pm 5^\circ\text{C}$ ($68 \pm 9^\circ\text{F}$)
- Volume control: Maximum
- Tape speed select switch: 2.4cm/s
- FF/REW switch: OFF

• VAS/Pause switch: OFF

ITEM	MEASUREMENT & ADJUSTMENT
Adjusting the governor circuit (μ adjustment)	<p>Note: This unit is designed to supply the motor and motor governor circuit board together, thus requiring no governor circuit adjustment when the motor is replaced. However, the R103 adjusting resistor in the motor governor circuit uses $10\text{k}\Omega$ to $20\text{k}\Omega$ depending on the product. When replacing the resistance of R103, be sure to use a resistance of the same value.</p>
A) Tape speed adjustment Condition: * Playback mode Equipment: * DC power supply * Digital electronic counter * Test tape ...QZZMWA for 2.4cm/s ...QZZMWBL for 1.2cm/s	<ol style="list-style-type: none"> 1. Test equipment connection is shown in fig. 11. 2. Apply 3V to DC IN. 3. Connect the monitor output (8Ω) to the counter. 4. Playback the tape speed adjusting tape (for 2.4cm/s 3kHz, QZZMWA, for 1.2cm/s QZZMWBL). 5. Measure this frequency. <p style="text-align: center;">Standard value: $3000 \pm 90\text{ Hz}$ (2.4cm/s), $3000 \pm 90\text{ Hz}$ (1.2cm/s)</p> <ol style="list-style-type: none"> 6. If measured value is not within standard, adjust as follows. <p>A) 1.2cm/s adjustment</p> <ol style="list-style-type: none"> 1. Set the tape speed selector switch (S2) to 1.2cm/s. 2. Adjust tape speed adjustment VR101 (for 1.2cm/s adjustment) so that frequency is $3000 \pm 90\text{ Hz}$. <p>B) 2.4cm/s adjustment</p> <ol style="list-style-type: none"> 1. Set the tape speed selector switch (S2) to 2.4cm/s. 2. Measure in the same way as 1.2cm/s and adjust tape speed adjustment VR102 (for 2.4cm/s adjustment) so that frequency is $3000 \pm 90\text{ Hz}$.

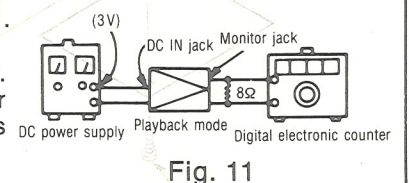
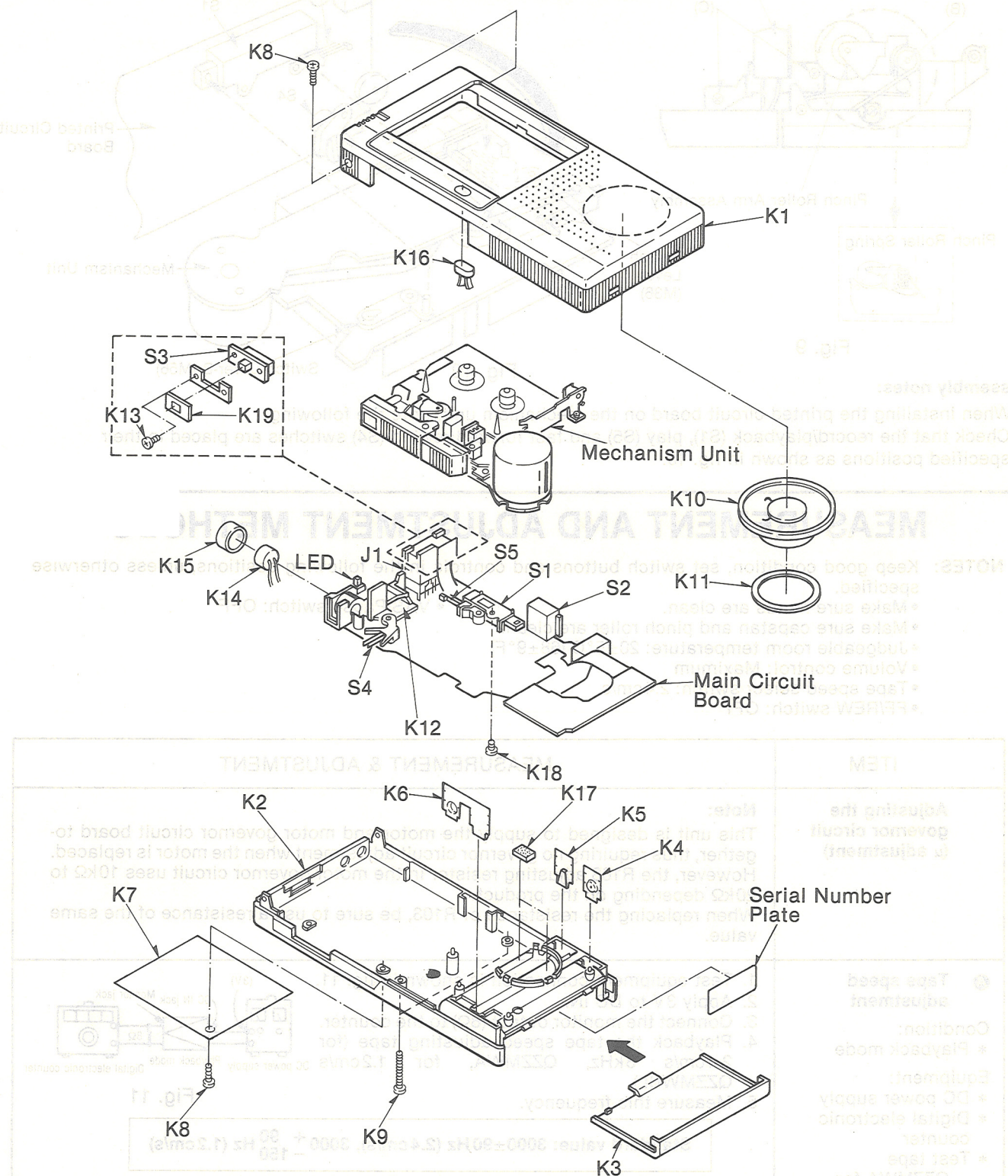


Fig. 11

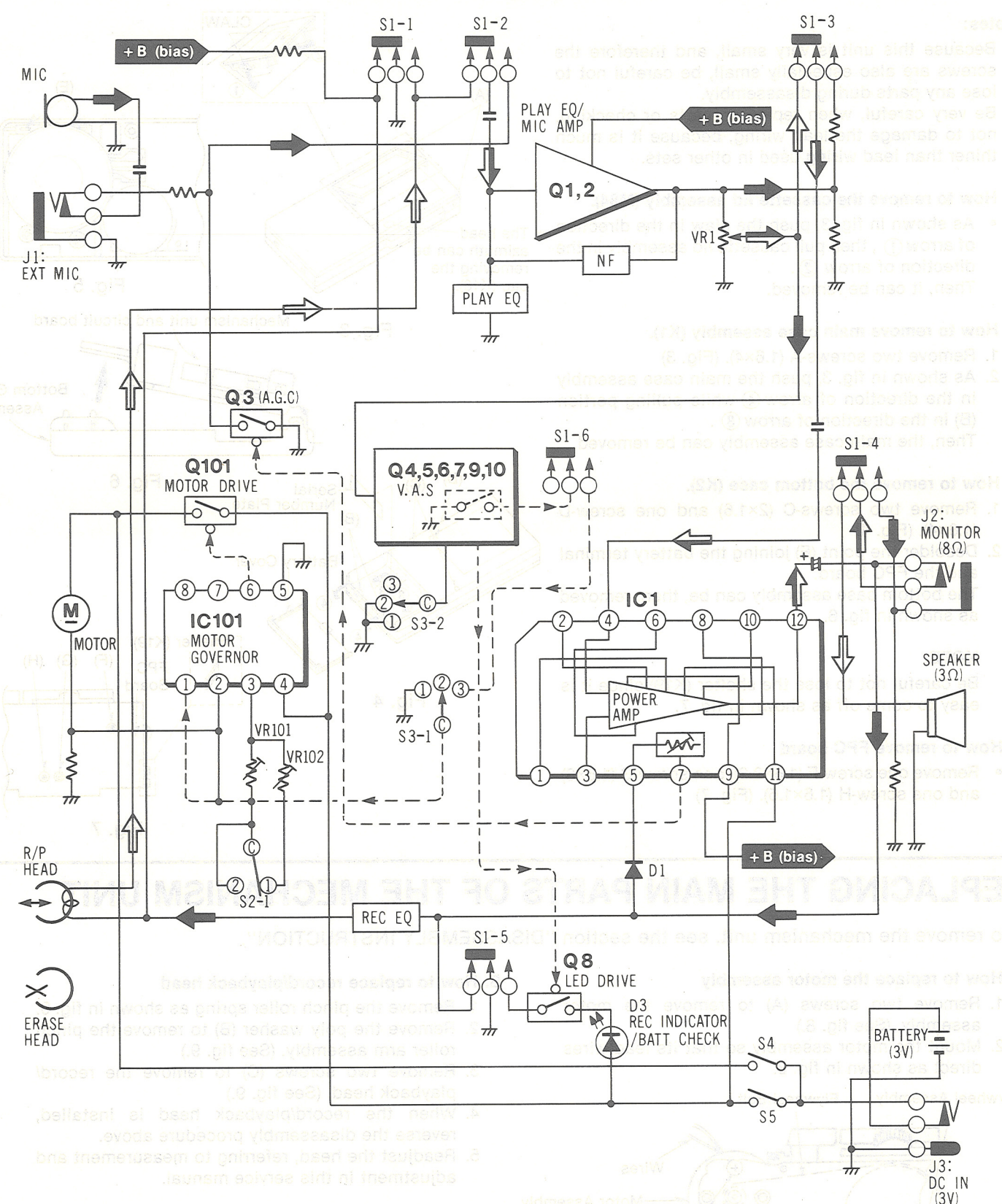
CABINET PARTS LOCATION



REPLACEMENT PARTS LIST






Ref. No.	Part No.	Part Name & Description	Ref. No.	Part No.	Part Name & Description	Ref. No.	Part No.	Part Name & Description
CABINET PARTS			ACCESSORY			PACKINGS		
K 1	QYM0952S	Main Case Assembly	K 13	XQN16 + A3	Screw $\phi 1.6 \times 3$	P 1	[P] QPN4585	Inside Carton
K 2	QKM1610S	Bottom Case	K 14	WM063Y110	Condenser Microphone		[For U.S.A.]	
K 3	QKF4040S2	Battery Cover	K 15	QBG1641	MIC Cushion	P 2	[C] QPN4605	Inside Carton
K 4	QJB0162	Battery Terminal-A	K 16	QKJ0411H1	Azimuth Cap		[For Canada.]	
K 5	QJB0163	Battery Terminal-B	K 17	QBH0177	Felt	P 3	QPA0661	Spacer
K 6	QJB0164	Battery Terminal-C	K 18	XTNQ16A15F	Screw $\phi 1.6 \times 1.5$		QQC1844	Label
K 7	QGS3168	Main Name Plate	K 19	QQC1735	Shelter (for S3)			
K 8	XTNQ16C3MFC	Screw $\phi 1.6 \times 3$						
K 9	XTN2 + 16JFC	Tapping Screw $\phi 2 \times 16$	A 1	[P] QQT3620	Instruction Book			
K 10	EAS3P108S	Speaker		[For U.S.A.]				
K 11	QBM1307	Speaker Cushion		[C] QQT3674	Instruction Book			
K 12	QKJ0526	Switch Holder		[For Canada.]				

BLOCK DIAGRAM



NOTES:

- S1-1—S1-6Record/Playback switch (shown in playback position).
- S2-1Tape speed selector (shown in 2.4cm/s position).
[1...2.4cm/s, 2...1.2cm/s]
- S3-1, S3-2.....Pause/VAS ON/OFF switch (shown in OFF position).
[1...Pause, 2...OFF, 3...VAS]
- S4.....Fast forward/Rewind switch (shown in OFF position).
- S5.....Playback switch (shown in OFF position).
- VR1Volume control.
- VR101Tape speed adjustment VR (for 1.2cm/s).

- VR102Tape speed adjustment VR (for 2.4cm/s).
- ()This symbol indicates the NPN switching transistor.
- () this arrow indicates the flow of the recording signal.
- () this arrow indicates the flow of the playback signal.
- () this arrow indicates the flow of the recording signal and playback signal combination.
- () this arrow indicates the flow of the control signal.

CIRCUIT BOARDS AND WIRING CONNECTION DIAGRAM

Back Side View

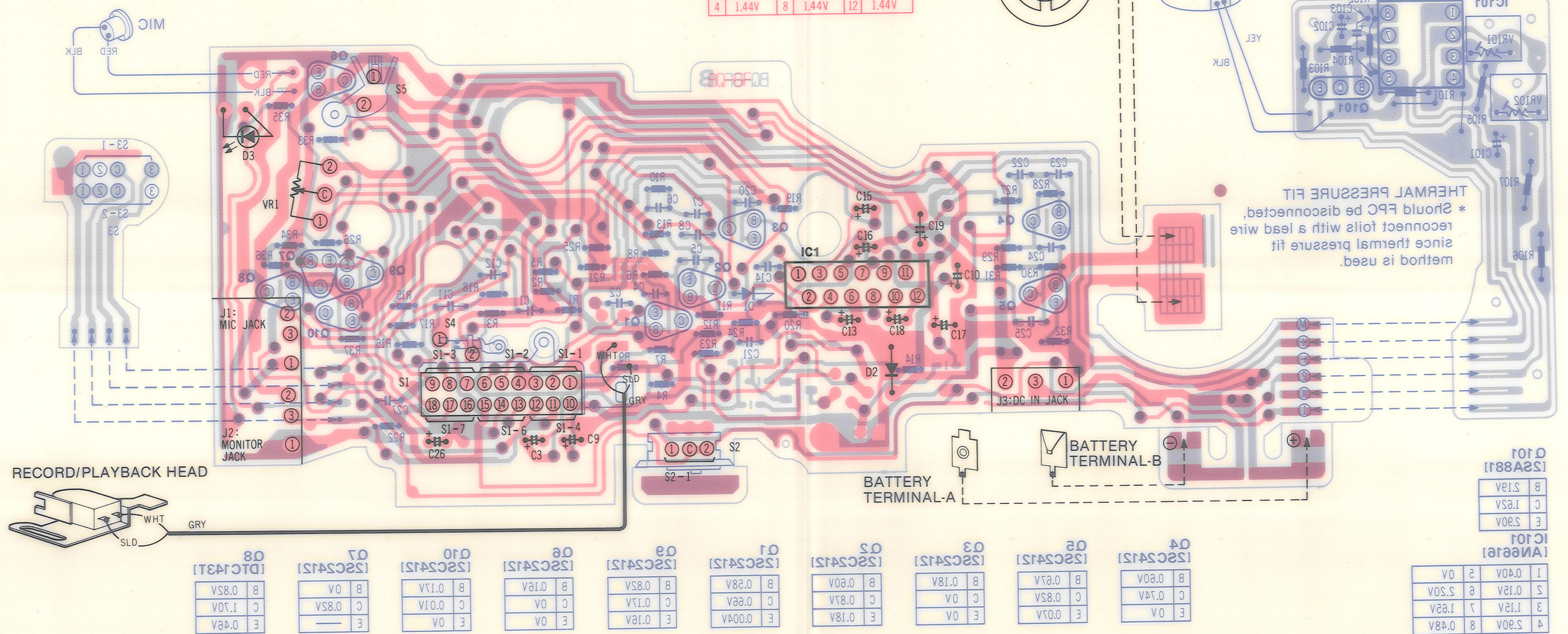
IC1
[BA515M]

1	1.51V	5	0V	9	2.82V
2	0.71V	6	0V	10	2.76V
3	1.46V	7	0.18V	11	2.97V
4	1.44V	8	1.44V	12	1.44V

SPEAKER

ROTOM

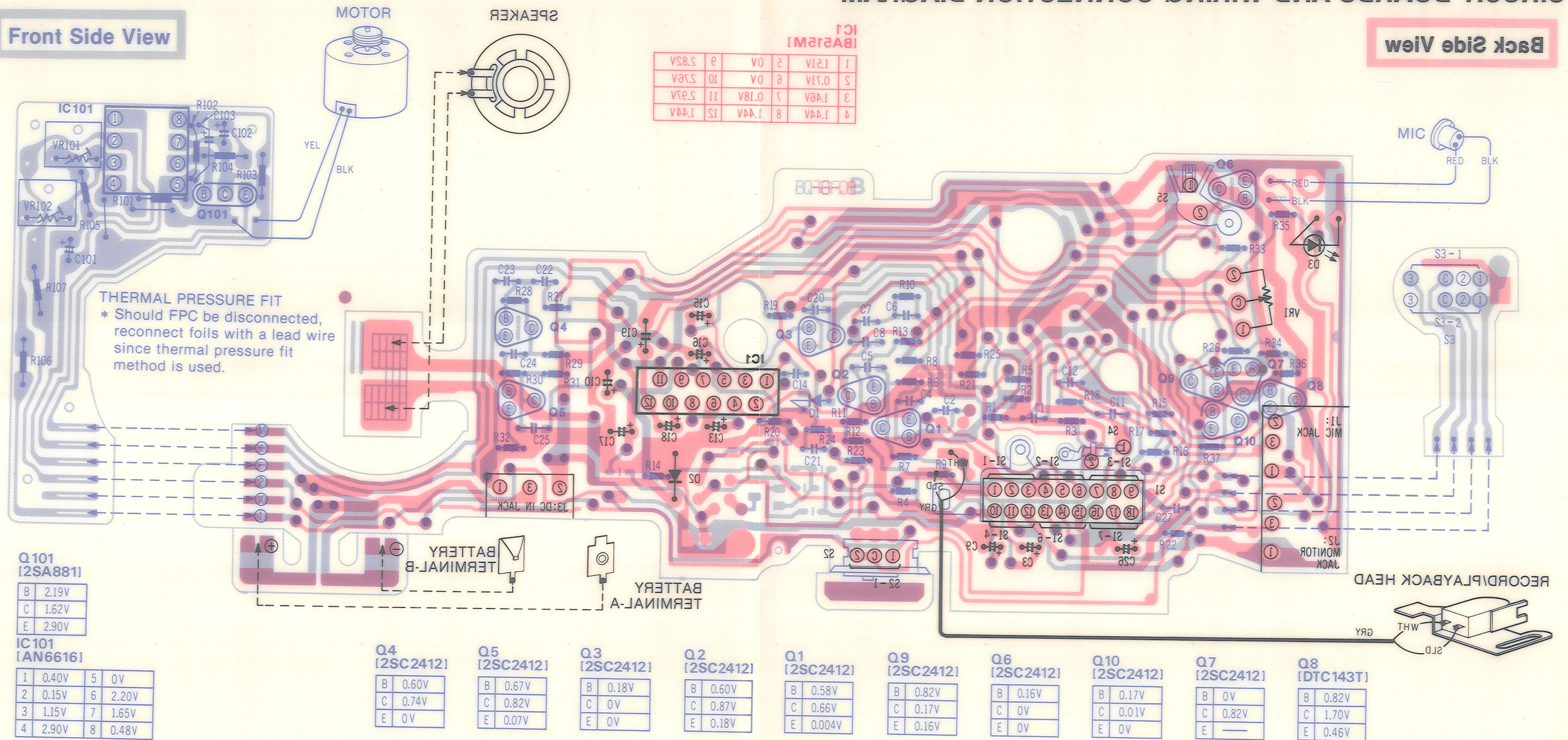
Front Side View



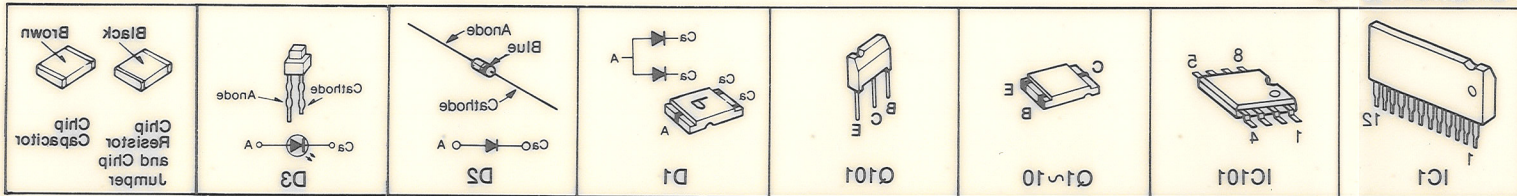
CIRCUIT BOARDS AND WIRING CONNECTION DIAGRAM

Front Side View

Back Side View








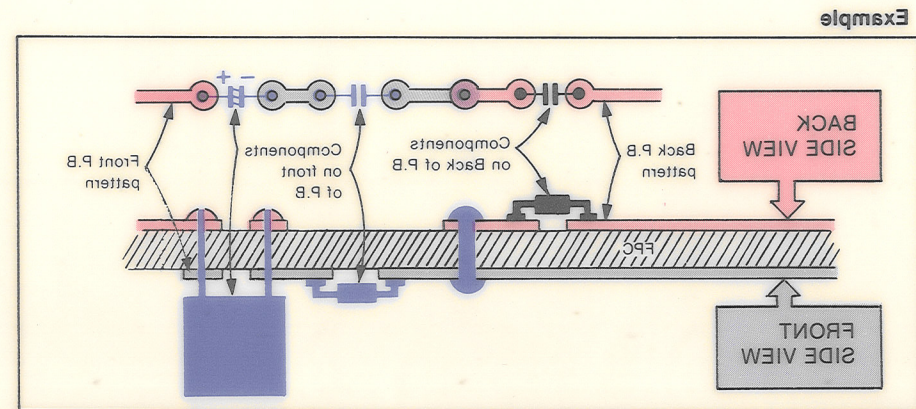
TERMINATIONS



- This circuit board diagram may be modified at any time with the development of new technology.

NOTES:

- The circuit shown in  on the conductor indicates printed circuit on the back side of the printed circuit board.
- The circuit shown in  on the conductor indicates printed circuit on the front side of the circuit board, which is part of the mechanism unit.
- Components on back of P.B. are identified by black symbols.
- Components on front of P.B. are identified by blue symbols.
- The symbols (●) () shown in the circuit board indicates connection points between conductors on the front side and back side of the circuit board.
- Voltage values shown in  are measured values at the front pattern side of the printed circuit board.
- Voltage values shown in  are measured values at the back



NOTES:

BLK	Black
BLU	Blue
BWN	Brown
GRY	Gray
GRN	Green
L. BLU	Light Blue
Nil	No Color Mark
ORG	Orange
PNK	Pink
RED	Red
SLD	Shield Wire
VLT	Violet
WHT	White
YEL	Yellow

SCHEMATIC DIAGRAM

ELECTRICAL PARTS LIST

NOTES: RESISTORS

ERD.....Carbon
ERG.....Metal-oxide
ERS.....Metal-oxide
ERO.....Metal-film
ERX.....Metal-film
ERQ.....Fuse type metallic
ERC.....Solid
ERF.....Cement

CAPACITORS

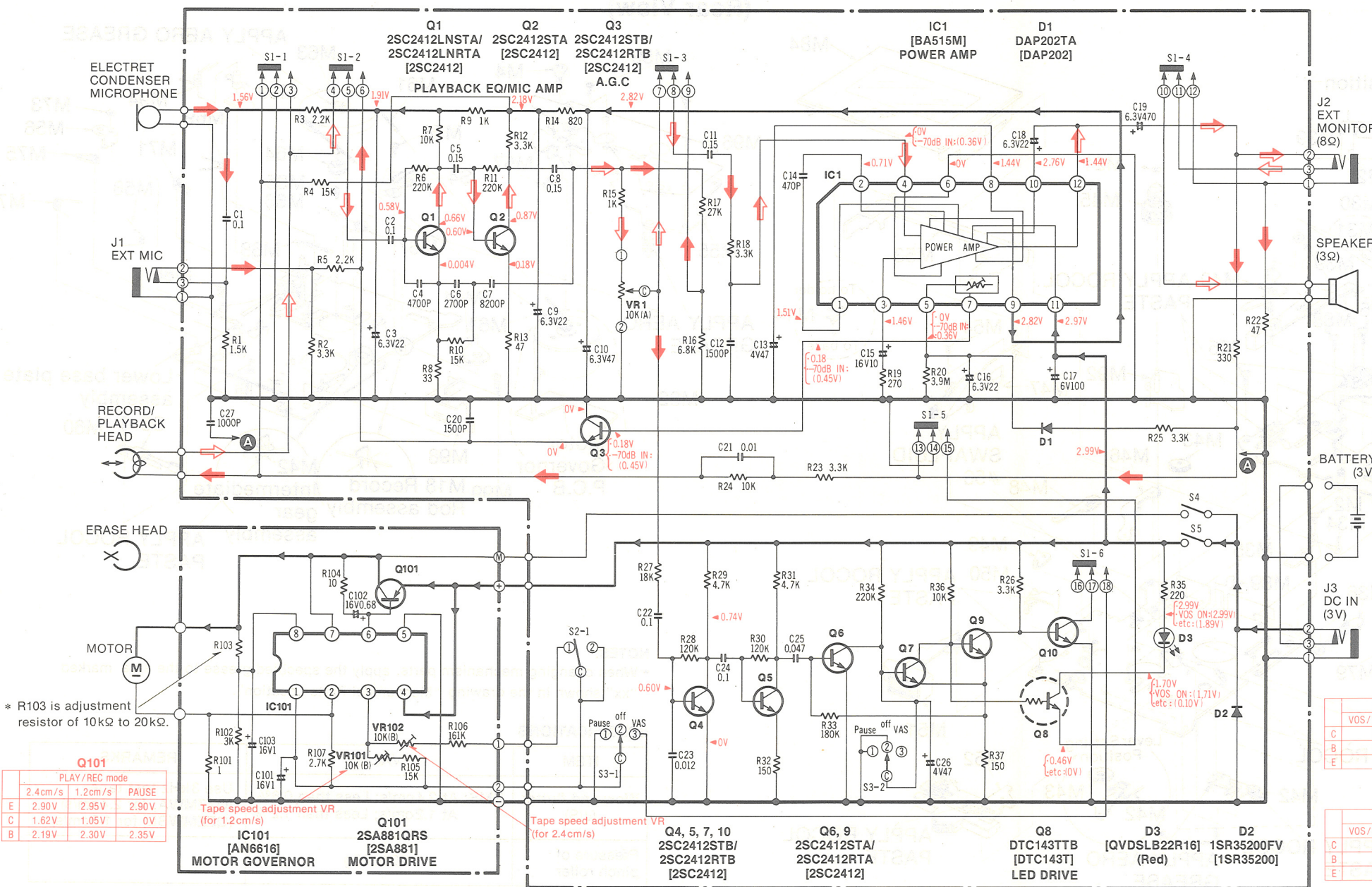
ECBA.....Ceramic
ECG.....Ceramic
ECK.....Ceramic
ECC.....Ceramic
ECF.....Ceramic
ECQM.....Polyester film
ECQE.....Polyester film
ECQF.....Polypropylene
ECE.....Electrolytic
ECEON.....Non polar electrolytic
EQS.....Polystyrene
ECST.....Tantalum
QCS.....Tantalum

CHIP RESISTORS

RRD.....Carbon
CHP CAPACITORS
QCU.....Ceramic

REPLACEMENT PARTS LIST

Ref. No.	Part No.	Ref. No.	Part No.	Ref. No.	Part No.
RESISTORS					
R 1	RRD10XJ152	R 29	RRD10XJ472	C 5	QCUX1E154ZFX
R 2	RRD10XJ332	R 30	RRD10XJ124	C 6	QCUT1H272MRL
R 3	RRD10XJ222	R 31	RRD10XJ472	C 7	QCUT1H822KRL
R 4	RRD10XJ153	R 32	RRD10XJ151	C 8	QCUX1E154ZFX
R 5	RRD10XJ222	R 33	RRD10XJ184	C 9	ECEA0JK220
R 6	RRD10XJ224	R 34	RRD10XJ224	C 10	ECEA0JK470
R 7	RRD10XJ103	R 35	RRD10XJ221	C 11	QCUX1E154ZFX
R 8	RRD10XJ330	R 36	RRD10XJ103	C 12	QCUT1H152MRL
R 9	RRD10XJ102	R 37	RRD10XJ151	C 13	ECEA0GK470
R 10	RRD10XJ153	R 101	ERSA39T1R0	C 14	QCUT1H471MRL
R 11	RRD10XJ224	R 102	ERD10TJ302	C 15	ECEA1CK100
R 12	RRD10XJ332	R 103	Selectable Resistor: 10kΩ ~ 20kΩ	C 16	ECEA0JK220
R 13	RRD10XJ470	R 104	[Center Value: 16kΩ (ERD10TJ163)]	C 17	ECEA0JK101
R 14	RRD10XJ821	R 105	ERD10TJ163	C 18	ECEA0JK220
R 15	RRD10XJ102	R 106	ERD10TJ183	C 19	ECEA0JU471
R 16	RRD10XJ682	R 107	ERD10TJ272	C 20	QCUT1H152MRL
R 17	RRD10XJ273			C 21	QCUT1H103MRL
R 18	RRD10XJ332			C 22	QCUT1E104ZFL
R 19	RRD10XJ271			C 23	QCUT1H123MRL
R 20	RRD18XK395			C 24	QCUT1E104ZFL
R 21	RRD10XJ331			C 25	QCUX1E473ZFX
R 22	RRD10XJ470			C 26	ECEA0GK470
R 23	RRD10XJ332			C 27	QCUT1H102MRL
R 24	RRD10XJ103			C 101	ECSF1CE105
R 25, 26	RRD10XJ332			C 102	ECSF1CM684
R 27	RRD10XJ183				
R 28	RRD10XJ124				
VARIABLE RESISTORS					
VR 1	EVLCPAA00A14				
VR 101, 102	EVNA6AA00B14				
CAPACITORS					
C 1, 2	QCUT1E104ZFL				
C 3	ECEA0JK220				
C 4	QCUT1H472MRL				
TRANSISTORS					
Q 1, 2, 3, 4, 5, 6, 7	2SC2412				
Q 8	DTC143T				
Q 9, 10	2SC2412				
Q 101	2SA881				
DIODES & RECTIFIERS					
D 1	DAP202				
D 2	1SR35200				
D 3	QVDSL22R16				
INTEGRATED CIRCUITS					
IC 1	BA515M				
IC 101	AN6616				



* R103 is adjustment resistor of 10kΩ to 20kΩ.

Q101				
PLAY/REC mode				
2.4cm/s	1.2cm/s	PAUSE		
2.90V	2.95V	2.90V		
1.62V	1.05V	0V		
2.19V	2.30V	2.35V		

IC101				
2.4cm/s				
PLAY	F.F/REW	PLAY	F.F/REW	PAUSE
1 0.40V	0.32V	0.30V	0.21V	0.05V
2 0.15V	0.06V	0.15V	0.06V	0.05V
3 1.15V	1.04V	1.15V	1.04V	1.03V
4 2.90V	2.97V	2.90V	2.97V	2.90V
5 0V	0V	0V	0V	0.05V
6 2.20V	2.56V	2.20V	2.56V	2.35V
7 1.65V	2.97V	1.06V	2.97V	0.05V
8 0.48V	0.60V	0.25V	0.60V	0.05V

Q5				
PLAY				
VOS/PAUSE: OFF	VOS/PAUSE: OFF	VOS: ON	REC (-72dB IN)	VOS: ON
C 0.82V	0.82V	0.82V	1.31V	1.31V
B 0.67V	0.67V	0.67V	0.63V	0.63V
E 0.07V	0.07V	0.07V	0.05V	0.05V

Q6				
PLAY				
VOS/PAUSE: OFF	VOS/PAUSE: OFF	VOS: ON	REC (-72dB IN)	VOS: ON
C 0V	0V	0.64V	0V	0.02V
B 0.16V	0.16V	0.05V	—	—
E 0V	0V	0V	0V	0V

Q7				
PLAY				
VOS/PAUSE: OFF	VOS/PAUSE: OFF	VOS: ON	REC (-72dB IN)	VOS: ON
C 0.82V	0.82V	0.10V	0.81V	0.81V
B 0V	0V	0.64V	0V	0.02V
E 0.16V	0.61V	0.05V	0.15V	0.15V

NOTES:

- S1-1—S1-6Record/Playback switch (shown in playback position).
- S2-1Tape speed selector (shown in 2.4cm/s position).
- S3-1, S3-2.....Pause/VAS ON/OFF switch (shown in OFF position).
- S4.....Fast forward/Rewind switch (shown in OFF position).
- S5.....Playback switch (shown in OFF position).
- VR1Volume control.
- VR101Tape speed adjustment VR (for 1.2cm/s).
- VR102Tape speed adjustment VR (for 2.4cm/s).
- Resistance are in ohms (Ω), 1/8 watt unless specified otherwise.
- 1K = 1,000Ω, 1M = 1,000KΩ.
- Capacity are in microfarads (μF) unless specified otherwise.
- P = Pico-farads.

- All voltage values shown in circuitry are under no signal condition and playback mode with volume control at maximum position otherwise specified. However, the voltage in record mode is indicated in () when it differs from the in playback mode.
- FF/REWVoltage values at fast forward/rewind mode.
- PAUSEVoltage values at pause mode.
- VOS ONVoltage values at which the VAS switch is tuned on.
- 72dB INVoltage values at recording mode (input signal level: -72dB/1 kHz).
- 2.4cm/sVoltage values at 2.4cm/s (Tape speed select switch) mode.
- 1.2cm/sVoltage values at 1.2cm/s (Tape speed select switch) mode.
- For measurement, use VTVM.

- (→) this arrow indicates the flow of the playback signal.
- (→) this arrow indicates the flow of the recording signal.
- (→) this arrow indicates the flow of the playback and recording signal in combination.
- (→) this arrow indicates the flow of the B+ (bias).
- Described in the schematic diagram are two types of numbers; the supply part number and production parts number for transistors and diodes. One type of number is used for supply parts number and production parts number when they are identical.

SPECIFICATION

Standard recording input level MIC: around -72dB

* Volume control...MAX.

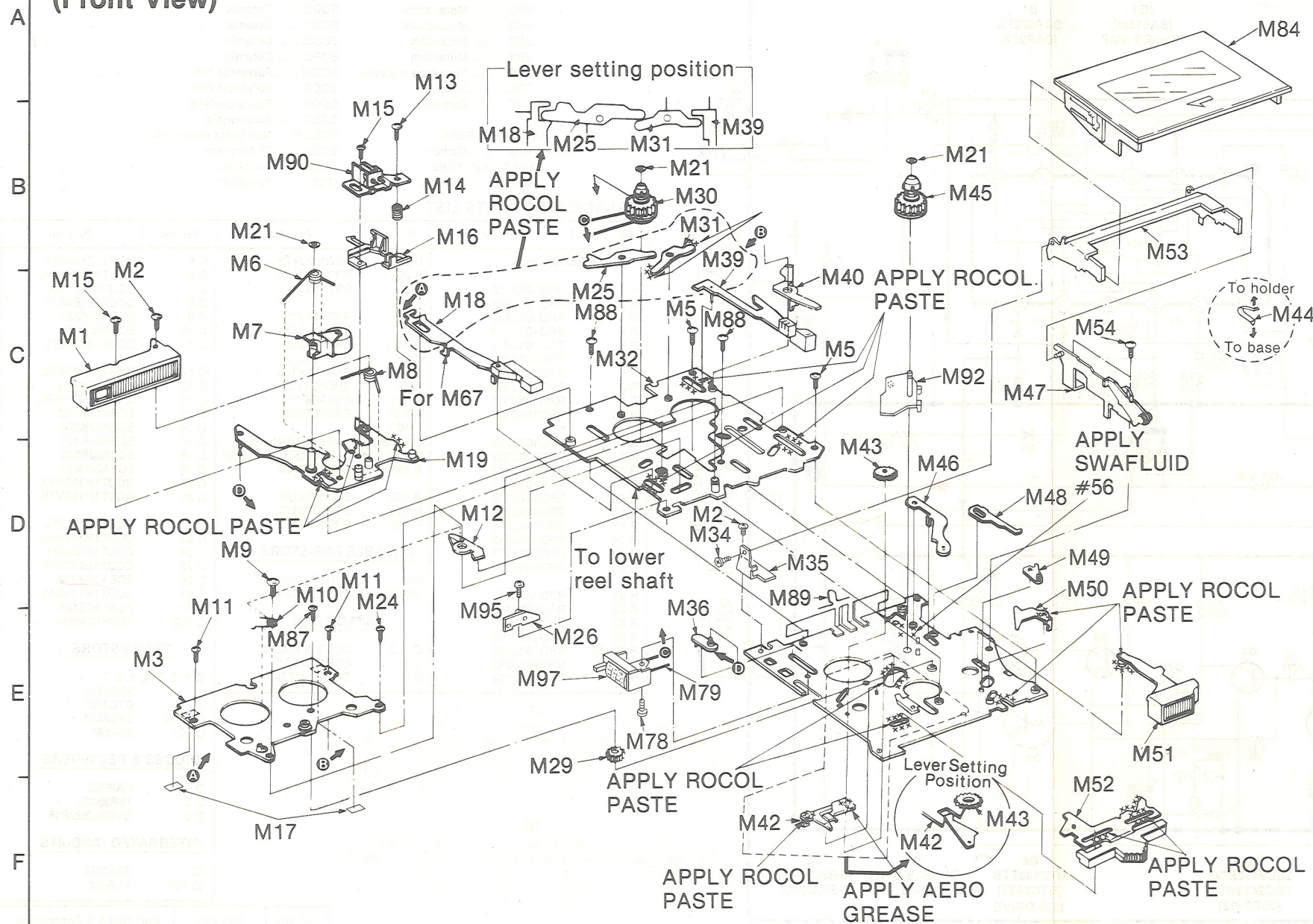
e.g. Q1
2SC2021LNF5—Production parts number
or 2SD636HS
[2SD636]—Supply parts number
D1
OA90SMTA—Production parts number
[OA90]—Supply parts number

The supply parts number is described alone in the replacement parts list.

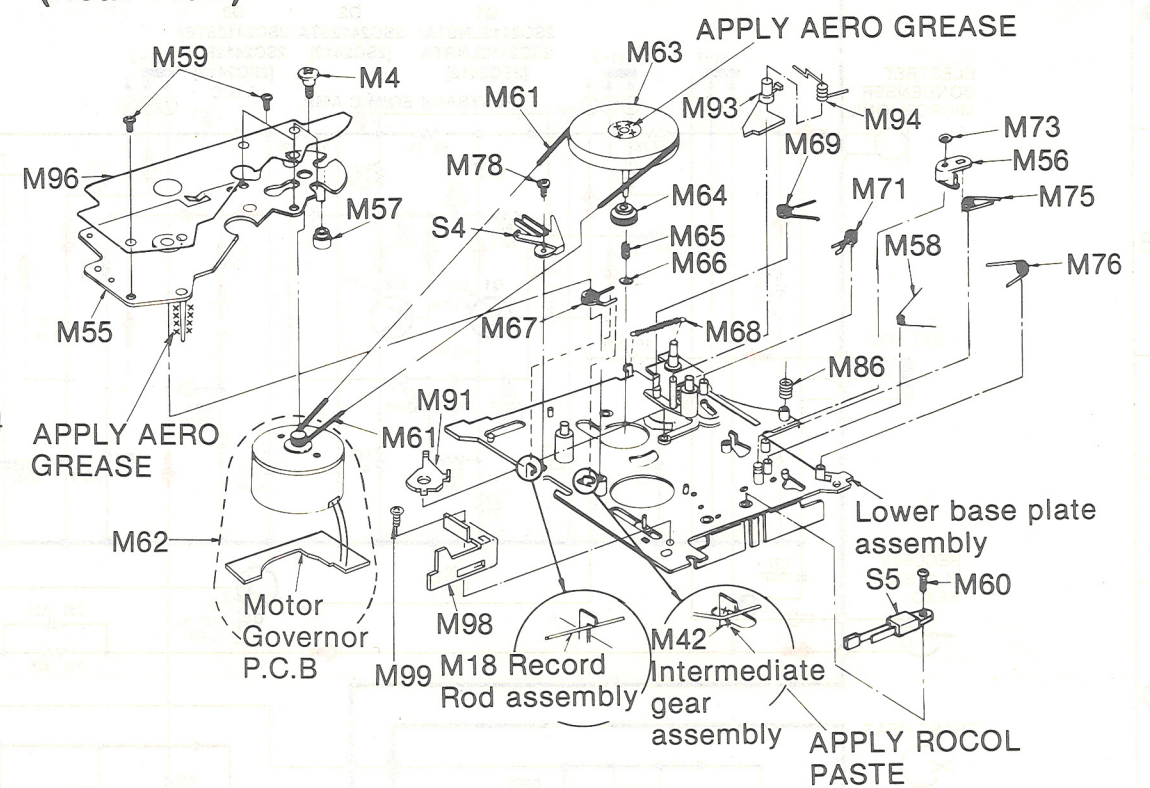
This schematic diagram may be modified at any time with the development of new technology.

Ref. No.	Part No.	Part Name & Description
SWITCHES		
S 1	QSS6221	Slide Switch (Record/Playback Selector)
S 2	QSS2230	Slide Switch (Tape Speed Selector)
S 3	QSS2302	Slide Switch (VAS/PAUSE Selector)
S 4	QSB0250	Leaf Switch (FF/Rewind)
S 5	QSB0276	Leaf Switch (Playback)
JACKS		
J 1, 2	QJA0450	M2 Jack (MIC/Monitor)
J 3	QJA0181	DC IN Jack

MECHANISM PARTS LOCATION (Front View)



(Rear View)



NOTES:

- When changing mechanism parts, apply the specified grease to the area marked "xx" shown in the drawing "Mechanical Parts Location".

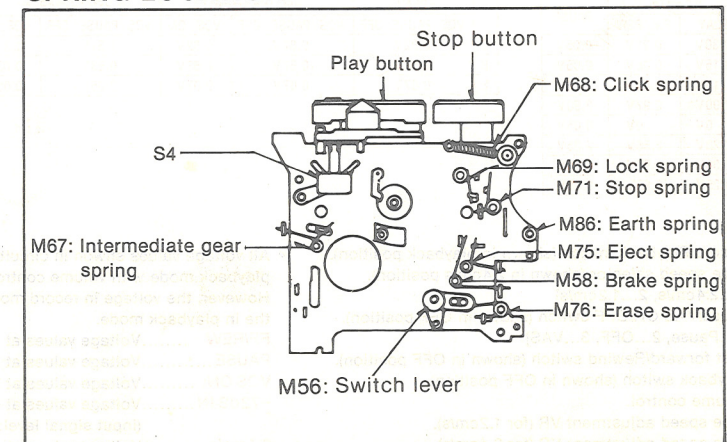
SPECIFICATIONS

ITEM	VALUE	REMARKS
Wow and flutter (JIS)	RMS; At 2.4 cm/s; Less than 0.6% At 1.2 cm/s; Less than 1.2%	Use 3kHz test tape (QZZMWA; for 2.4 cm/s) (QZZMWBL; for 1.2 cm/s)
Pressure of pinch roller	200±25 g	

REPLACEMENT PARTS LIST

Ref. No.	Part No.	Part Name & Description	Ref. No.	Part No.	Part Name & Description	Ref. No.	Part No.	Part Name & Description	Ref. No.	Part No.	Part Name & Description
MECHANICAL PARTS											
M 1	QG01782	Playback Button	M 24	XQN16 + A16FN	Screw $\phi 1.6 \times 1.6$	M 50	QMF2347	Click Plate	M 71	QBN1631	Stop Spring
M 2	XTNQ16A2M	Tapping Screw $\phi 1.6 \times 2$	M 25	QML4109	Reversing Lever-A	M 51	QXR0744	Stop/Eject Button Assembly	M 73	QBW2007	Snap Washer
M 3	QXK2877	Reflection Plate Assembly	M 26	QMA4395	Mechanism Hold Angle-A	M 52	QXH0455	Fast Wind Plate Assembly	M 75	QBN1627	Eject Spring
M 4	QHQ1360	Step Screw	M 29	QDG1156	Rewind Gear Assembly	M 53	QXA1235	Lid Holder Assembly	M 76	QBN1736	Erase Spring
M 5	XQN16 + C35FZ	Screw $\phi 1.6 \times 3.5$	M 30	QXD0151	Takeup Reel Table Assembly	M 54	XTNQ16C2M	Screw $\phi 1.6 \times 2$	M 78	XTNQ16C28F	Screw $\phi 1.6 \times 2.8$
M 6	QBN1632	Pinch Roller Spring	M 31	QML4110	Reversing Lever-B	M 55	QXK2876	Motor Holding Plate Assembly	M 79	QDB0293	Counter Belt
M 7	QXL1437	Pinch Roller Arm Assembly	M 32	QXK2252	Upper Base Plate	M 56	QML3647	Switch Lever-B	M 84	QYF0536S4	Cassette Lid Assembly
M 8	QBN1628	Playback Spring	M 34	QHQ1308	Step Screw	M 57	QBG1768	Motor Cushion	M 86	QBC1411	Earth Spring
M 9	QHQ1254	Step Screw	M 35	QMA3886	Holder Angle	M 58	QBN1633	Brake Spring	M 87	XTNQ14A39FFZ	Screw $\phi 1.4 \times 3.9$
M 10	QBN1738	Record Lock Spring	M 36	QMF2143	Switch Lever-A	M 59	XQS16 + A4FZ	Screw $\phi 1.6 \times 4$	M 88	XTNQ16A25	Screw $\phi 1.6 \times 2.5$
M 11	XQS14 + A14FC	Screw $\phi 1.4 \times 1.4$	M 39	QXR0966	Erase Rod Assembly	M 60	XTNQ16C5M	Screw $\phi 1.6 \times 5$	M 89	QBN1892	Cassette Retainer Spring
M 12	QML3874	Record Lock Lever	M 40	QML3400	Record Detection Lever	M 61	QDB0272	Flywheel Belt	M 90	QWY0136Y	Record/Playback Head
M 13	QHQ1366	Head Adjustment Screw	M 42	QMF2242	Intermediate Gear Plate	M 62	MXDE3B3LWA	Motor (with Motor Governor P.C.B.)	M 91	QML4133	Driving Lever
M 14	QBC1331	Head Spring	M 43	QDG1237	Intermediate Gear	M 63	QXF0162	Flywheel Assembly	M 92	QML4134	Reel Table Lever
M 15	XTNQ16A22M	Tapping Screw $\phi 1.6 \times 2.2$	M 44	QBP1878	Plate Spring-B	M 64	QDG1204	Flywheel Gear	M 93	QML4132	Lock Release Lever
M 16	QMG0130	Tape Guide	M 45	QXD0162	Supply Reel Table Assembly	M 65	QBC1354	Flywheel Spring	M 94	QBN2071	Lock Release Lever Spring
M 17	XTW1380	Spacer	M 46	QML3875	Brake Arm Assembly	M 66	QBW2060	Poly Washer	M 95	XTNQ16C3M	Screw $\phi 1.6 \times 3$
M 18	QXR1003	Record Button Assembly	M 47	QXA1257	Eject Angle Assembly	M 67	QBN1737	Intermediate Gear Spring	M 96	QTW1376	Insulator Sheet
M 19	QXK2257	Head Base Plate Assembly	M 48	QMF1998	Eject Plate	M 68	QBT1855	Click Spring	M 97	QXC0077	Counter Assembly
M 21	QBW2081	Poly Washer	M 49	QXL1236	Lock Lever Assembly	M 69	QBN2070	Lock Spring	M 98	QMA4374	Mechanism Hold Angle-B
									M 99	XTNQ16C22FFZ	Tapping Screw $\phi 1.6 \times 2.2$

SPRING LOCATION



Service Manual

Microcassette

RN-109

(Silver)

Supplement-1

2-Speed Microcassette Recorder
with Voice Activated System

- Please use this manual together with the service manual for model No. RN-109 order No. GAD84035403C1.
- This Service Manual indicates the main differences between; Original RN-109 and RN-109 (Supplement-1).

This is the Service Manual
for the following areas.

M ...For U.S.A.

C ...For Canada.

— CHANGE —

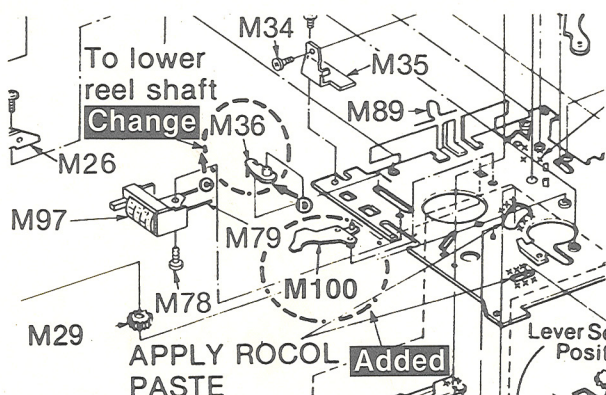
PARTS COMPARISON TABLE:

Please revise the original parts list in the Service Manual (RN-109) to conform to the changes shown herein.
If new part numbers are shown, be sure to use them when ordering parts.

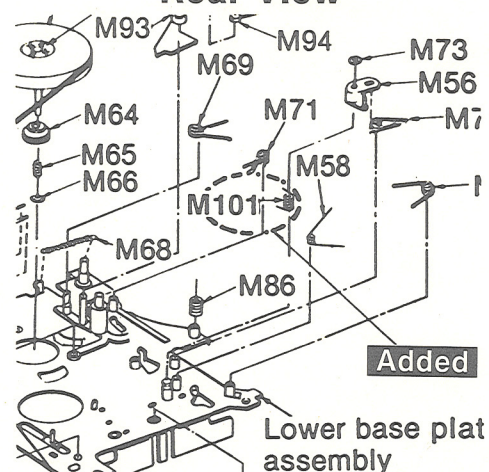
Ref. No.	Part Name & Description	Part Numbers		Remarks
		RN-109 (Original)	RN-109 (Supplement-1)	
D2	Diode	1SR35200	—	Deleted
M17	Spacer	XTW1380	—	Deleted
M36	Switch Lever-A	QMF2143	QMF2354	Change
M100	Playback Lever	—	QML4182	Added
M101	Switch Lever Spring	—	QBN2098	Added

MECHANISM PARTS LOCATION

Front View



Rear View



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GAD **M C**
H.S.

Printed in Japan (H)

Service Manual

Microcassette

2-Speed Microcassette Recorder
with Voice Activated System**RN-109A**
(Silver)

- RN-109A is similar model to RN-109.
- Please use this manual together with the service manual for model No. RN-109 (Original) order No. GAD84035403C1 and model No. RN-109 (Supplement-1) order No. GAD85015403S1.
- This service manual indicates the main differences between; Original RN-109 and RN-109A.

This is the Service Manual
for the following areas.**M** ...For U.S.A.**C** ...For Canada.**PARTS COMPARISON TABLE:**

Please revise the original parts list in the Service Manual RN-109 **M** **C** to conform to the changes shown herein.
If new part numbers are shown, be sure to use them when ordering parts.

Ref. No.	Part Name & Description	Part Number		Remarks
		RN-109 M C (Original)	RN-109A M C	
C5, 8, 11	Capacitors	QCUX1E154ZFX	ECUX1E104ZF	25V, 0.1 μ F
M30	Takeup Reel Table Assembly	QXD0151	RFJ47Z	
K1	Main Case Assembly	QYM0952S	QKM1609S	
K2	Bottom Case	QKM1610S	QKM1610H	
K3	Battery Cover	QKF4040S2	QKF4040H4	
K7	Main Name Plate	QGS3168	RGT1138Z	
K8	Screw \oplus 1.6 \times 3	XTNQ16C3MFC	XTNQ16C3MFN	
K9	Tapping Screw \oplus 2 \times 16	XTN2+16JFC	XTN2+16JFN	
A1 M (For U.S.A.)	Instruction Book	QQT3620	RQX4577Z	
A1 C (For Canada.)	Instruction Book	QQT3674	RQX4578Z	
P1 M (For U.S.A.)	Inside Carton	QPN4585	RPK1999Z	
P1 C (For Canada.)	Inside Carton	QPN4605	RPK2000Z	
P3	Label	QQC1844	RQA451Z	

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